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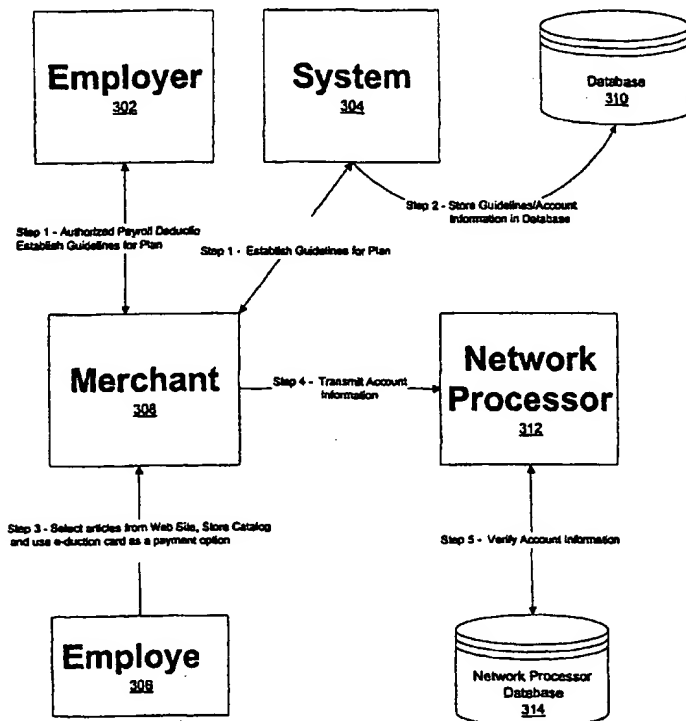
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(54) Title: A PAYROLL DEDUCTION SYSTEM AND METHOD FOR USING THE SAME



(57) Abstract: The present invention relates to a system and method for using an e-duction card as a payment instrument, whereby a purchase price of articles purchased on-line or off-line is deducted from an employee's paycheck. The e-duction card is similar to a credit card but is not bound by the same terms and conditions of a credit card. An employer authorizes the inventive system to accept payroll deduction as a payment option for the employer's employees. The employer and/or the system establish guidelines for utilizing the payroll deduction option during commerce and the system stores the guidelines and identifying information for the employer and corresponding employees in a database. Merchants also sign up with the inventive system and agree to accept the e-duction card as a payment instrument. Thereafter, when an employee selects articles from the merchant's web site or store, the employee may use the e-duction card to pay for the selected articles. A magnetic stripe on the e-duction card stores an employee's account information. When a consumer purchases a product and uses the e-duction card as a payment instrument, the account information on the e-duction magnetic stripe is transmitted to a network processor with

access to information stored on the database. The processor verifies the employee and merchant status, and the employee account information in order to approve or reject the transaction. This method therefore affords authorized employees the option of using the e-duction card as a payment instrument.

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### **A Payroll Deduction System and Method for Using the Same**

This application repeats a substantial portion of prior Application No. 09/429,616, filed on October 29, 1999 and Application No. 09/497,142, filed on February 3, 2000, and adds and claims additional disclosure not presented in the  
5 prior applications. This application names an inventor named in the prior applications, it constitutes a continuation-in-part of the prior applications.

#### **FIELD OF THE INVENTION**

The present invention relates to a system and method for processing  
10 payments of articles selected during electronic commerce or off-line commerce, and more particularly, to a method for using a payroll deduction card as a payment option during on-line and off-line commerce.

#### ***Background of the Invention***

Advances in computer processing power and network communications  
15 have made information from a wide variety of sources available to users on computer networks. Computer networking allows network computer users to share information, software applications and hardware devices, and internetworking enables a set of physical networks to be connected into a single network such as the Internet. Computers connected to the Internet or connected to  
20 networks other than the internet also have access to information stored on those networks. The World Wide Web (Web), a hypermedia system used on the Internet, enables hypertext linking, whereby documents automatically reference or link other documents located on connected computer networks around the world. Thus, users connected to the Internet have almost instant access to  
25 information stored in relatively distant regions.

A page of information on the Web may include references to other Web pages and may include a broad range of multimedia data including textual, graphical, audio, and animation information. Currently, Internet users retrieve

information from the Internet, through the Web, by 'visiting' a web site on a computer that is connected to the Internet.

The web site is, in general terms, a server application that displays information stored on a network server computer. The web site accepts  
5 connections from client programs, such as Internet browser applications. Browser applications, such as Microsoft Explorer™ or Netscape Internet Browser™, allow Internet users to access information displayed on the web site. Most browser applications display information on computer screens and permit a user to navigate through the Web using a mouse. Like other network  
10 applications, Web browsing uses a client-server paradigm. When given a Uniform Resource Locator (URL) of a document, the browser application becomes a client and it contacts a server application specified in the URL to request the document. After receiving the document from the server application, the browser application displays the document to the user. When the browser  
15 application interacts with the server application, the two applications follow the Hyper-Text Transport Protocol (HTTP). HTTP allows the browser application to request a specific article, which the server application then returns. To ensure that browser applications and server applications inter-operate unambiguously, HTTP defines the exact format for requests sent from the browser application to  
20 the server application as well as the format of replies that the server application returns.

As the number of physical networks connected to the Internet continues to grow, so too will the number of web sites that are accessible to Internet users and so too will commercial activity on the Internet. Providers of a wide range of  
25 products and/or services are continuously exploring new methods for promoting and selling them. Commercial vendors' web sites are similar to other types of web sites except that they usually incorporate functionality to enable financial transactions between users and vendors.

Currently, during an electronic commerce transaction on the Internet, a  
30 consumer enters the URL of a vendor and the browser application requests a web page associated with the URL from the appropriate server application. The

consumer may select articles displayed on the vendor's web page and submit the selection to the vendor through the browser application. For example, a consumer on the Internet, wishing to purchase a software application, may enter the URL of a vendor into the browser application. The browser displays a  
5 corresponding web page and the consumer may order the software application on the web page through the browser application. Upon receiving the consumer's selection, the vendor requests payment for the selected articles before delivering them to the consumer. The consumer may pay the vendor through credit cards or the vendor may require cash upon delivery of the selected articles. However, for  
10 consumers who do not have credit cards, do not wish to use credit cards, or do not have cash available at the time of delivery of the selected articles, this method of purchasing articles during electronic commerce is unsatisfactory.

Some employers currently offer, as a benefit to their employees, payroll deduction plans as a method of paying for predetermined products and/or services  
15 with predetermined vendors. Under the payroll deduction plan, the employer may deduct the cost of already purchased articles and/or services from an employee's future pay checks. Before the employee can use the payroll deduction plan as a payment option, the employer must approve the total purchase amount and the vendor. While this scheme affords employees the  
20 option of purchasing products and services on future earnings, the list of predefined products/services and vendors is usually limited. Moreover, the payroll deduction payment option is not utilized in electronic commerce nor is the payroll deduction payment option utilized for regular purchases during non-electronic commerce. As electronic commerce on the Internet grows, so too will  
25 the desire to use the payroll deduction plan as an option for on-line purchases.

#### SUMMARY OF THE INVENTION

The present invention relates to a system and method for using an e-  
duction card as a payment instrument, whereby a purchase price of articles  
30 purchased on-line or off-line is deducted from an employee's paycheck. The e-duction card is similar to a credit card but is not bound by the same terms and

conditions of a credit card. With the present inventive system and e-duction card, an employer authorizes the inventive system to accept payroll deduction as a payment option for the employer's employees. The employer and/or the system establish guidelines for employee utilization of the payroll deduction option during commerce. The system stores the guidelines and identifying information for the employer and corresponding employees who will use the payroll deduction in a system database. Alternatively, the employer may periodically provide a list of employees (with corresponding information) who qualify to participate in the payroll deduction plan and the system then updates the system database with the periodic list. Merchants also sign up with the inventive system and agree to accept the e-duction card as a payment instrument.

Thereafter, when an employee selects articles from the merchant's web site, store, catalog, or other related device, the employee may use the e-duction card to pay for the selected articles. The e-duction card may be executed on its own network infrastructure or on existing network infrastructures, such as an American Express network infrastructure or a Visa/Mastercard network infrastructure. A magnetic stripe on the e-duction card stores the employee's account information. When that employee purchases a product and uses the e-duction card as a payment instrument, the account information on the e-duction magnetic stripe is transmitted to a network processor with access to information stored on the database. The processor verifies the employee and merchant status, and verifies the employee account information in order to approve or reject the transaction. This method, therefore, affords authorized employees the option of using the e-duction card as a payment instrument.

Specifically in a preferred embodiment of the present invention, when an employee 'enters' the selected merchant's web site or store and chooses articles to be purchased, the employee may pay for the items with the e-duction card. Account information that is stored on the e-duction card's magnetic stripe is transmitted to the network processor. The network processor is a processor used in an existing network infrastructure and all account information stored in the system database is also stored in the processor's database. The network

processor uses the account information to verify the employee's employment status and to verify that the employee is authorized to use payroll deduction for the amount of the purchase. The network processor also verifies that the merchant is a participating merchant. Upon verifying the employee and merchant  
5 information, the network processor may approve or reject the transaction. If the transaction is approved, the employee's account is debited and the employee is notified. Alternatively, the system may include its own processor for processing transactions.

Data is uploaded to the system database at specific times during  
10 predefined periods. Information in the database is downloaded to a payroll processor (which can, of course, be the employer) at predetermined times. The payroll processor deducts the transaction amount from the employee's paycheck and a statement of the deduction is given to the employee.

In a preferred embodiment of the invention, the e-duction card may also  
15 serve as a smart card. A chip is embedded in the e-duction card and the information on the chip is updated when a transaction is approved.

It is therefore the object of the present invention to provide a method for authorizing selected vendors to offer payroll deduction as a payment option to appropriate consumers during commerce transactions and for establishing  
20 guidelines for the payroll deduction plan.

It is another object of the invention to provide a method for allowing the consumer to select payroll deduction as a payment option during on-line shopping and for confirming the selection before it is processed against the e-duction card.

25 Additional features and advantages of the invention will be set forth in the description that follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and advantages of the invention will be realized and attained by the system particularly pointed out in the written description and claims hereof as well as the appended drawings.

30 To achieve these and other advantages and in accordance with the purpose of the invention, as embodied and broadly described, the present invention

provides a method for using an e-duction card as a payment instrument during on-line and off-line purchases with a participating merchant, whereby a purchase amount paid with the e-duction card is deducted from an employee's future paycheck, the method comprising the steps of: authorizing, by an employer, a processing system to offer payroll deduction as a payment option during commerce transactions between the employee and the participating merchant; establishing, by the processing system and the employer, guidelines for using the e-duction card; enrolling the employee to participate in a payroll deduction plan; creating, by the processing system, an e-duction card that is used as a payment option by the authorized employee and account that correspond to the e-duction cards; selecting, by the employee, articles to be purchased from the participating merchant and paying for the articles with the e-duction card; submitting, by the participating merchant to a network processor, information stored on the e-duction card; verifying, by a network processor, the employee and the participating merchant status; processing, by the network processor, a transaction reflecting the employee's purchase and transferring a transaction file with all transactions to the processing system in order for the appropriate amount to be deducted from the employee's future paycheck; calculating, by the processing system, installment payments for each transaction in the transaction file; and deducting calculated installment payments from the employee's future paycheck, updating the employee's corresponding account and notifying the employee about the transaction.

An alternate embodiment of the present invention provides a system for using an e-duction card as a payment instrument during on-line and off-line purchases with a participating merchant, whereby a purchase amount paid with the e-duction card is deducted from an employee's future paycheck, the system comprises: first processing means for authorizing, by an employer, a processing system to offer payroll deduction as a payment option during commerce transactions between the employee and the participating merchant; second processing means for establishing, by the processing system and the employer, guidelines for using the e-duction card; third processing means for enrolling the



employee to participate in a payroll deduction plan; fourth processing means for creating, by the processing system, e-duction cards that are used as a payment option by authorized employees and accounts that correspond to the e-duction cards; fifth processing means for selecting, by the employee, articles to be  
5 purchased from the participating merchant and paying for the articles with the e-duction card; sixth processing means for submitting, by the participating merchant to a network processor, information stored on the e-duction card; seventh processing means for verifying, by a network processor, the employee and merchant status; eighth processing means for processing, by the network  
10 processor, a transaction reflecting the employee's purchase and transferring a transaction file with all transactions to the processing system in order for the appropriate amount to be deducted from the employee's future paycheck; ninth processing means for calculating, by the processing system, installment payments for each transaction in the transaction file; and tenth processing means for  
15 deducting calculated installment payments from the employee's future paycheck and updating the employee corresponding account and notifying the employee about the transaction.

An alternate embodiment of the present invention provides a method for using an e-duction card as a payment instrument during on-line and off-line  
20 purchases with a participating merchant, whereby a purchase amount paid with the e-duction card is deducted from an employee's future paycheck, the method comprising the steps of: authorizing, by an employer, a processing system to offer payroll deduction as a payment option during commerce transactions between the employee and the participating merchant; signing-up, by the  
25 processing system, preferred merchants who agree to accept the e-duction card; establishing, by the employer, the processing system, and the preferred merchant, guidelines for using the e-duction card; enrolling the employee to participate in a payroll deduction plan; creating, by the processing system, e-duction cards that are used as a payment option by authorized employees and accounts that  
30 correspond to the e-duction cards; selecting, by the employee, articles to be purchased from the preferred merchant and paying for the articles with the e-

duction card; submitting, by the preferred merchant to a network processor,  
information stored on the e-duction card; verifying, by a network processor, the  
employee and merchant status; processing, by the network processor, a  
transaction reflecting the employee's purchase and transferring a transaction file  
5 with all transactions to the processing system in order for the appropriate amount  
to be deducted from the employee's future paycheck; calculating, by the  
processing system, installment payments for each transaction in the transaction  
file; and deducting calculated installment payments from the employee's future  
paycheck and updating the employee corresponding account and notifying the  
10 employee about the transaction.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

The accompanying drawings, which are included to provide a further  
understanding of the invention and are incorporated in and constitute a part of  
15 this specification, illustrate embodiments of the invention that together with the  
description serve to explain the principles of the invention.

In the drawings:

Fig. 1 illustrates a computer network in which the inventive payroll  
deduction plan may be incorporated;

20 Fig. 2 illustrates the TCP/IP Layering Model Protocol used during  
communications between components on the computer network;

Fig. 3 illustrates a method for using an e-duction card as payroll deduction  
instrument during on-line or off-line purchases;

25 Figs. 4A and 4B illustrate the steps implemented according to the  
preferred embodiment of the inventive method of Fig. 3.

#### **DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Reference will now be made in detail to the preferred embodiments of the  
present invention, examples of which are illustrated in the accompanying  
30 drawings. The present invention described below describes the functionality of

the inventive system and method for processing payroll deduction by using an e-deduction card.

Fig. 1 is an example of a local area network (LAN) 100 that is configured to utilize a non-repudiation protocol. LAN 100 comprises a server 102, four  
5 computer systems 104, 106, 108, and 110, and peripherals 112, such as printers and other devices that may be shared by components on LAN 100. Computer systems 104, 106, 108 and 110 may serve as clients for server 102 and/or as clients and/or servers for each other and/or for other components connected to LAN 100. Components on LAN 100 are preferably connected together by cable  
10 media, for example copper or fiber-optic cable and the network topology may be a token ring topology 114. It should be apparent to those of ordinary skill in the art that other media, for example, wireless media, such as optical and radio frequency, may also connect LAN 100 components. It should also be apparent that other network topologies, such as Ethernet, may be used.

15 Data may be transferred between components on LAN 100 in packets, i.e., blocks of data that are individually transmitted over LAN 100. Routers 120, 122 create an expanded network by connecting LAN 100 to other computer networks, such as the Internet, other LANs or Wide Area Networks (WAN). Routers are hardware devices that may include a conventional processor,  
20 memory, and separate I/O interface for each network to which it connects. Hence, components on the expanded network may share information and services with each other. In order for communications to occur between components of physically connected networks, all components on the expanded network and the routers that connect them must adhere to a standard protocol. Computer  
25 networks connected to the Internet and to other networks typically use TCP/IP Layering Model Protocol. It should be noted that other internetworking protocols may be used.

As illustrated in Fig. 2, the TCP/IP Layering Model comprises an application layer (Layer 5) 202, a transport layer (Layer 4) 204, an Internet layer  
30 (Layer 3) 206, a network interface layer (Layer 2) 208, and a physical layer (Layer 1) 210. Application layer protocols 202 specify how each software

application connected to the network uses the network. Transport layer protocols 204 specify how to ensure reliable transfer among complex protocols. Internet layer protocols 206 specify the format of packets sent across the network as well as mechanisms used to forward packets from a computer through one or more routers to a final destination. Network interface layer protocols 208 specify how to organize data into frames and how a computer transmits frames over the network. Physical layer protocols 210 correspond to the basic network hardware. By using TCP/IP Layering model protocols, any component connected to the network can communicate with any other component connected directly or indirectly to one of the attached networks.

Fig. 3 illustrates an inventive method for using an e-duction card as a payment instrument in order to deduct the price of a purchased item from an employee's future paycheck. According to the invention, an employer 302 authorizes system 304 to accept payroll deduction as a unique form of payment during a commerce transaction with the employer's employees, an example of which is shown as employee 306. System 304 also enables merchants 308, who agree to accept the e-duction card as a payment instrument, to participate in a payroll deduction plan. During the initial authorization, employer 302 and/or system 304 representative establish guidelines for a payroll deduction plan. For example, employer 302 and/or system 304 representative may establish a purchase price limit versus a maximum balance that an employee may carry on the e-duction card, the number of pay periods during which deductions can occur and the number of transactions allowed to each employee 306. They also may base the number of payroll deductions on the total purchase price. For example, a purchase price that is less than forty-nine dollars and ninety nine cents is deducted from one future paycheck; a purchase price that is greater than fifty dollars and less ninety-nine dollars and ninety nine cents is deducted from two future paychecks, and so on.

Preferably to participate in the payroll deduction plan, employee 306 fills out an enrollment form. The information on the enrollment form is entered into an enrollment database on system 304 and system 304 verifies employee 306

eligibility status by confirming employee 306 employment status and income, among others. The enrollment database also stores guidelines established by system 304 and/or employer 302. For example, a guideline in the enrollment database may establish that employee 306 must be employed for a predefined length of time, for example six months, in order to participate in the payroll deduction plan. In another example, a guideline in the enrollment database may establish a maximum credit limit for payroll deduction, for each employee 306, that is based on a percentage of employee 306 gross pay. During the enrollment process, employee 306 may also choose sign up for an overdraft line of credit. To approve the overdraft line of credit, system 304 checks employee 306 credit report. Upon approval of the overdraft line of credit, if employee 306 purchases an item that cost more than the maximum payroll deduction credit limit, the extra amount is charged to employee 306 overdraft account. Payment terms for the payroll deduction account and overdraft account are calculated differently. Thus, for example, the amount for the payroll deduction account is deducted from future paychecks and the amount for the overdraft account may be paid as a regular interest bearing credit card account.

Upon entering employee 306 information into the enrollment database, system 304 transmits the information to employer 302 for verification. Employer 302 verifies employee 306 personnel information, such as name, social security number, employment status, salary, and length of employment. Upon receiving a verification notice from employer 306, system 304 stores the employee 306 information in a member database and transmits a record for employee 306 to a network processor 312.

In an alternate embodiment of the invention, the verification may be automated by synchronizing a periodic list of eligible employees from employer 302 with information in the enrollment database. System 304 may use the periodic list to re-evaluate eligibility for each employee 306. For example, if employee 306 received a two-percent raise, upon obtaining the list system 304 recalculates employee 306 maximum payroll deduction credit limit. In another

example, system 304 may use the periodic list to cancel accounts of employees who are no longer on the list.

Employer 302 and system 304 representative also may establish several sets of guidelines, whereby each set is associated with employees 306 within a specific status. For example, one set of guidelines may apply to hourly employees and another set may apply to salaried employees. Employees 306 may view all guidelines or only those that apply to them and guidelines associated with each employee 302 may change as the employee's status changes. As would be obvious to one skilled in the art, system 304 may include unique guidelines for each participating employer 302 and/or employee 306.

During initial setup, system 304 also may setup guidelines with preferred merchants 308. For example, a merchant 308 may be authorized to offer interest free payroll deductions up to a predefined time for payments over a certain amount. As is apparent to one skilled in the art, a merchant who already accepts a credit card that is also used as an e-duction card may not have to sign up to participate in system 304 in order to accept that card. Merchants 308 using system 304 may also automatically deduct periodic, for example monthly, payments, such as utility bills and investments, if employee 306 is authorized to use payroll deduction for such transactions. The payroll deduction plan guidelines and other information that identify employer 302 and corresponding employees 306 are stored on a system database 310 in system 304.

Thereafter, when an employee selects articles from the merchant's 308 web site or store, employee 306 may use the e-duction card to pay for the selected articles. Additionally, an employee may use the e-duction card in commerce in any similar fashion as any type of credit card is used. For example, employee 306 may use the e-duction card when purchasing items from a catalog, through telemarketing, offers appearing on the television, etc. Other methods of purchase will be known to those skilled in the art and are within the scope of this invention.

The e-duction card used is similar to a credit card, but is not bound by the same terms and conditions of a credit card. For example, employees using the e-

duction card may not be charged interest or transaction fees to use the e-duction card. The e-duction card may be executed on its own network infrastructure or on existing network infrastructures, such as an American Express network infrastructure or a Visa/Mastercard network infrastructure. Existing networks  
5 issue private brand cards, which carry the network's logo. Thus, an e-duction card may be a private brand that is executed on an existing network infrastructure and looks the same as currently used credit card, such as American Express card and Visa card, among others. Of course, the e-duction may not necessarily carry the network's logo. A magnetic stripe on the e-duction card stores employee 306  
10 account information, as is stored in system database 310.

Thereafter, employees 306 may use the e-duction card as a payment instrument for articles purchased on-line or in a store. When an employee 306 chooses articles to be purchased from a participating merchant, employee 306 may swipe the e-duction card in an existing network infrastructure.  
15 Alternatively, employee 306 may 'enter' the merchant's 308 web site and upon selecting articles to be purchased, enter the account number of the e-duction card on the merchant's web site, or may select items from a catalog and enter the account number of the e-duction card on a form or over the telephone. Other commerce transactions are known to those skilled in the art and are within the  
20 scope of this invention.

When the e-duction card is swiped into the network infrastructure, account information that is stored on the e-duction card's magnetic stripe is transmitted to network processor 312. Network processor 312 may be a processor used in an existing network infrastructure and account information  
25 stored in system database 310 also is stored in the network processor's database 314. Network processor 312 uses the account information and information stored in the processor's database 314 to verify the employee's employment status and to verify that employee 306 is authorized to use payroll deduction for the amount of the purchase. Network processor 312 also checks the available payroll  
30 deduction and overdraft credit for employee 306 against the amount of the purchase and performs standard risk management checks. If the purchase amount

is less than the available credit, network processor 312 approves the transaction and transmits an approval code to merchant 308. Network processor 312 also verifies that merchant 308 transmitting the account information is a participating merchant by verifying that merchant 308 account number exists in the processor's database 314. Upon verifying employee 306 and merchant 308 information, network processor 312 may approve or reject the transaction. Alternatively, the e-duction card may be swiped into it's own network infrastructure and system 304 may verify employee 306 and merchant 308 account information and approve or reject the transaction.

Network processor 312 initiates payment for the amount of the transaction to merchant 308, less a discount rate paid by merchant 308. Thereafter, at a predefined time, network processor 312 transmits a transaction file with all transactions to system 304 and debits an account associated with system 304. Based on the guidelines in system database 310, system 304 calculates installment payments for each transaction in the transaction file. The installment payments are deducted from future paychecks. While calculating installment payments for each transaction, systems 304 checks a merchant identifier in the transaction file to determine if the associated merchant 308 is a preferred merchant. If merchant 308 is a preferred merchant, system 304 applies the payment guidelines that were previously established for that merchant to transactions associated with that merchant. System 304 sends the preferred merchant 308 a bill that is preferably based on a percentage of associated transactions.

Prior to the next pay period, system 304 generates a deduction file with the installment payments for each employee from whom payroll deduction should be made. The deduction file contains records for listing each employee name, social security number, employer name and identifier and the amount to be deducted from the upcoming paycheck. As is apparent, other information may be listed in the deduction file, and are within the scope of the invention. The deduction files is then transmitted to appropriate payroll processors at predetermined times. For example, at the end of a work week, accounts in



system database 310 that have been updated since the last transmission are sent to the appropriate payroll processor.

Based on employee 306 account information in system database 310, system 304 can determine who is employee's 306 employer, and which payroll processor processes the employee 306 paychecks. Some employers use paycheck processing companies to process their payroll and other employers perform this task themselves. The payroll processor sorts and segregates the deduction file by employer and transmits a payroll file to each employer 302. Employer 302 deducts the specified amount from employee 306 paycheck. Alternatively if the payroll processor processes the paycheck, when it cuts the next check it deducts the appropriate amount and notifies system 304 and employer 302 about the success or failure of each deduction for each employee. System 304 updates employee 306 account in system database 310 in order to reflect the payment. A statement notifying employee 306 of the payroll deduction is sent to employee 306 through the mail or by e-mail prior to the payroll deduction. If employee 306 is notified by e-mail, employee 306 may link to a system web site to review a purchasing history. Thus, employee 306 may review all payroll deductions for all articles purchased within a predefined period of time. When employee 306 receives the next paycheck, the installment payment will be deducted from the paycheck. The payroll processor then initiates an electronic funds transfer to transfer the total amount for all deductions for all employers for that pay period to a bank account associated with system 304. Thereafter system 304 sends a payment to network processor 312 to credit to account associated with system 304.

In an alternate embodiment of the invention, the e-duction card may include a chip that stores employee 306 account information and purchasing history, thereby functioning as a smart card. Information in the chip may include, among other things, employee 306 account number, employer, and payroll deduction status. Information in the e-duction card chip is updated after each transaction to reflect the transaction.

Figs. 4A and 4B illustrates the steps implemented in a preferred embodiment of the inventive payroll deduction method. In Step 410, employer 302 and merchant 308 sign up with system 304 to use the e-duction card as a unique form of payment during a commerce transaction with the employer's employees and establish guidelines for a payroll deduction plan.

In Step 420, the payroll deduction plan guidelines and other information that identify employer 302, merchant 308, and corresponding employees 306 are stored on a system database 310 in system 304. In Step 430, account information is stored on employee 306 e-duction card. In Step 440, employee 306 selects articles from the merchant's 308 web site or store, swipes the e-duction card in a network infrastructure or enters an account number on the e-duction card on the merchant's web site. In Step 450, account information that is stored on the e-duction card's magnetic stripe is transmitted to network processor 312. In Step 460, network processor 312 uses the account information and information stored in database 314 to verify employee's employment status, that employee 306 is authorized to use payroll deduction for the amount of the purchase, and that merchant 308 transmitting the account information is a participating merchant. In Step 470, network processor 312 may approve or reject the transaction.

In Step 480, network processor 312 transmits the transaction file to system 304 for installment payment calculations. In Step 490, the deduction file is transmitted from system 304 to the payroll processor and the payroll processor deducts the appropriate amount from employee 306 future paychecks and notifies system 304. In Step 500, system 304 updates employee 306 account in system database 310 in order to reflect the payment. In Step 510, a statement notifying employee 306 of the payroll deduction is sent to the employee through the mail, an e-mail, or by the employee accessing a web site containing the information.

The foregoing description has been directed to specific embodiments of this invention. It will be apparent, however, that other variations and modifications may be made to the described embodiments, with the attainment of some or all of their advantages. Therefore, it is the object of the appended claims

to cover all such variations and modifications as come within the true spirit and scope of the invention.

**WHAT IS CLAIMED:**

- 1 1. A method for using an e-duction card as a payment instrument during on-  
2 line and off-line purchases with a participating merchant, whereby a purchase  
3 amount paid with the e-duction card is deducted from an employee's future  
4 paycheck, the method comprising the steps of:
  - 5 authorizing, by an employer, a processing system to offer payroll  
6 deduction as a payment option during commerce transactions between the  
7 employee and the participating merchant;
  - 8 establishing, by the processing system and the employer, guidelines for  
9 using the e-duction card;
  - 10 enrolling the employee to participate in a payroll deduction plan;
  - 11 creating, by the processing system, an e-duction card that is used as a  
12 payment option by the authorized employee and account that correspond to the e-  
13 duction cards;
  - 14 selecting, by the employee, articles to be purchased from the participating  
15 merchant and paying for the articles with the e-duction card;
  - 16 submitting, by the participating merchant to a network processor,  
17 information stored on the e-duction card;
  - 18 verifying, by a network processor, the employee and the participating  
19 merchant status;
  - 20 processing, by the network processor, a transaction reflecting the  
21 employee's purchase and transferring a transaction file with all transactions to the  
22 processing system in order for the appropriate amount to be deducted from the  
23 employee's future paycheck;
  - 24 calculating, by the processing system, installment payments for each  
25 transaction in the transaction file; and
  - 26 deducting calculated installment payments from the employee's future  
27 paycheck, updating the employee's corresponding account and notifying the  
28 employee about the transaction.

1 18. The method of claim 1, wherein the step of calculating further comprises  
2 the steps of:

3 checking a merchant identifier in each transaction to determine if the  
4 associated merchant is a preferred merchant;

5 applying pre-established payment guidelines, if the merchant is a  
6 preferred merchant, with transactions associated with the merchant; and

7 sending the merchant a bill.

1 19. The method of claim 18, wherein the step of calculating further comprises  
2 the steps of generating a deduction file with installment payments for the  
3 employee and transmitting the deduction file to a payroll processor for sorting  
4 and processing by employer and for transmission to each employer that processes  
5 it's paycheck.

1 20. The method of claim 19, wherein the step of transmitting the deduction  
2 file further comprises the step of transmitting periodically synchronized  
3 information from either the network processor database or the system database to  
4 the appropriate payroll processor that processes the employee's paycheck.

1 21. The method of claim 19, wherein the step of generating the deduction file  
2 further comprises the step of including the employee's social security number,  
3 name and amount to be deducted from each paycheck or the total transaction  
4 amount.

1 22. The method of claim 19, further comprising the step of notifying the  
2 processing system and the employer that does not process it's paycheck about the  
3 success or failure of each deduction for the employee for the processing system to  
4 update the employee's account in a system database.

1 23. The method of claim 1, wherein the step of notifying further comprises  
2 the step of sending an e-mail to the employee, whereby the employee may use the  
3 e-mail to link to a system web site to review the employee's purchasing history  
4 and payroll deduction history for a pre-defined period of time.

1 24. The method of claim 1, wherein the step of selecting articles further  
2 comprises the step of selecting articles from the participating merchant's  
3 marketing means.

1 25. The method of claim 1, wherein the step of paying for the articles further  
2 comprises the step of entering the account number on the e-duction card on the  
3 participating merchant's web site.

1 26. The method of claim 1, wherein the step of paying for the articles further  
2 comprises the step of entering the account number on the e-duction card on the  
3 participating merchant's telephone system.

1 27. The method of claim 1, wherein the step of paying for the articles further  
2 comprises the step of using the e-duction card in any similar fashion as any type  
3 of credit card.

1 28. The method of claim 1, wherein the step of creating e-duction cards  
2 further comprises the step of creating cards that are similar to credit cards but that  
3 are not necessarily bound by the same terms and conditions of a credit card.

1 29. The method of claim 1, wherein the step of creating e-duction cards  
2 further comprises the steps of including a chip in the e-duction card for storing  
3 the employee account information and purchasing history and updating  
4 information on the chip to reflect each transaction.

1 30. The method of claim 1, wherein the step of creating e-duction cards  
2 further comprises the step of creating private brand cards that may be executed on  
3 an existing network infrastructure.

1 31. The method of claim 1, wherein the step of establishing guidelines further  
2 comprises the steps of:

3 establishing a maximum repayment balance allowed to each employee;  
4 establishing a number of repayment periods allowed to each employee;  
5 and  
6 basing the number of payroll deductions on a total balance price of the  
7 transaction.

1 32. The method of claim 1, wherein the step of deducting further comprises  
2 the step of initiating an electronic funds transfer to transfer the deduction from  
3 the employees to an account associated with the processing system to further  
4 credit an associated account in the network processor.

1 33. A system for using an e-duction card as a payment instrument during on-  
2 line and off-line purchases with a participating merchant, whereby a purchase  
3 amount paid with the e-duction card is deducted from an employee's future  
4 paycheck, the system comprises:

5 first processing means for authorizing, by an employer, a processing  
6 system to offer payroll deduction as a payment option during commerce  
7 transactions between the employee and the participating merchant;  
8 second processing means for establishing, by the processing system and  
9 the employer, guidelines for using the e-duction card;  
10 third processing means for enrolling the employee to participate in a  
11 payroll deduction plan;

12 fourth processing means for creating, by the processing system, e-duction  
13 cards that are used as a payment option by authorized employees and accounts  
14 that correspond to the e-duction cards;

15 fifth processing means for selecting, by the employee, articles to be  
16 purchased from the participating merchant and paying for the articles with the e-  
17 duction card;

18 sixth processing means for submitting, by the participating merchant to a  
19 network processor, information stored on the e-duction card;

20 seventh processing means for verifying, by a network processor, the  
21 employee and merchant status;

22 eighth processing means for processing, by the network processor, a  
23 transaction reflecting the employee's purchase and transferring a transaction file  
24 with all transactions to the processing system in order for the appropriate amount  
25 to be deducted from the employee's future paycheck;

26 ninth processing means for calculating, by the processing system,  
27 installment payments for each transaction in the transaction file; and

28 tenth processing means for deducting calculated installment payments  
29 from the employee's future paycheck and updating the employee corresponding  
30 account and notifying the employee about the transaction.

1 34. The system of claim 33, wherein the second processing means for  
2 establishing guidelines further comprises means for:

3 establishing a number of pay periods during which payroll deductions can  
4 occur;

5 establishing a number of transactions allowed to each employee; and

6 basing the number of payroll deductions on a total price of the transaction.

1 35. The system of claim 33, wherein the second processing means for  
2 establishing guidelines further comprises means for:



3           authorizing the participating merchant to offer interest free payroll  
4   deductions up to a predefined time for payments over a certain amount; and;  
5           authorizing the participating merchant to automatically deduct monthly  
6   payments from employees that are authorized to use payroll deduction for such  
7   transactions.

1   36.    The system of claim 33, wherein the second processing means for  
2   establishing guidelines further comprises means for establishing several sets of  
3   guidelines, whereby each set of guidelines is associated with employees within a  
4   particular status.

1   37.    The system of claim 33, wherein the third processing means for enrolling  
2   the employee further comprises means for:  
3           entering enrollment information provided by the employee into an  
4   enrollment database;  
5           verifying the employee eligibility status by confirming the employee  
6   employment information; and  
7           storing, after the step of verifying, the employee information in a member  
8   database and transmitting a record for the employee to the network processor.

1   38.    The system of claim 37, wherein the third processing means for enrolling  
2   the employee further comprises means for:  
3           transmitting enrollment information provided by the employee to the  
4   employer; and  
5           receiving from the employer a verification notice.

1   39.    The system of claim 37, wherein means for verifying the employee  
2   eligibility status further comprises means for:  
3           synchronizing a periodic list of eligible employees from the employer  
4   with information in the enrollment database; and

5 re-evaluating eligibility for each employee based on information in the  
6 periodic list.

1 40. The system of claim 37, wherein the third processing means for enrolling  
2 the employee further comprises means for enabling the employee to sign up for  
3 an overdraft line of credit by checking the employee's credit report.

1 41. The system of claim 33, further comprising means for storing the  
2 established guidelines and other identifying information for the employer, a  
3 preferred merchant and the employee in a system database.

1 42. The system of claim 33, wherein the sixth processing means for  
2 submitting information on the e-duction card, further comprises means for  
3 swiping the e-duction card into a network infrastructure.

1 43. The system of claim 42, wherein the sixth processing means for  
2 submitting information on the e-duction card, further comprises means for  
3 executing the e-duction card on the processing system network infrastructure.

1 44. The system of claim 42, wherein the sixth processing means for  
2 submitting information on the e-duction card, further comprises means for  
3 executing the e-duction card on an existing network infrastructure.

1 45. The system of claim 33, wherein the fourth processing means for creating  
2 further comprises means for storing the employee account information on a  
3 magnetic stripe in the e-duction card.

1 46. The system of claim 33, wherein the seventh processing means for  
2 verifying further comprises means for:  
3 using the account information on a magnetic stripe in the e-duction card  
4 and information on the network processor database to verify the employee's

5 employment status and account information and to verify that a submitting  
6 merchant is a participating merchant; and  
7 performing standard risk management checks and checking the available  
8 payroll deduction and overdraft credit for the employee against the amount of the  
9 purchase.

1 47. The system of claim 33, wherein the eight processing means for  
2 processing further comprises means for approving or rejecting the transaction  
3 after the means of verifying.

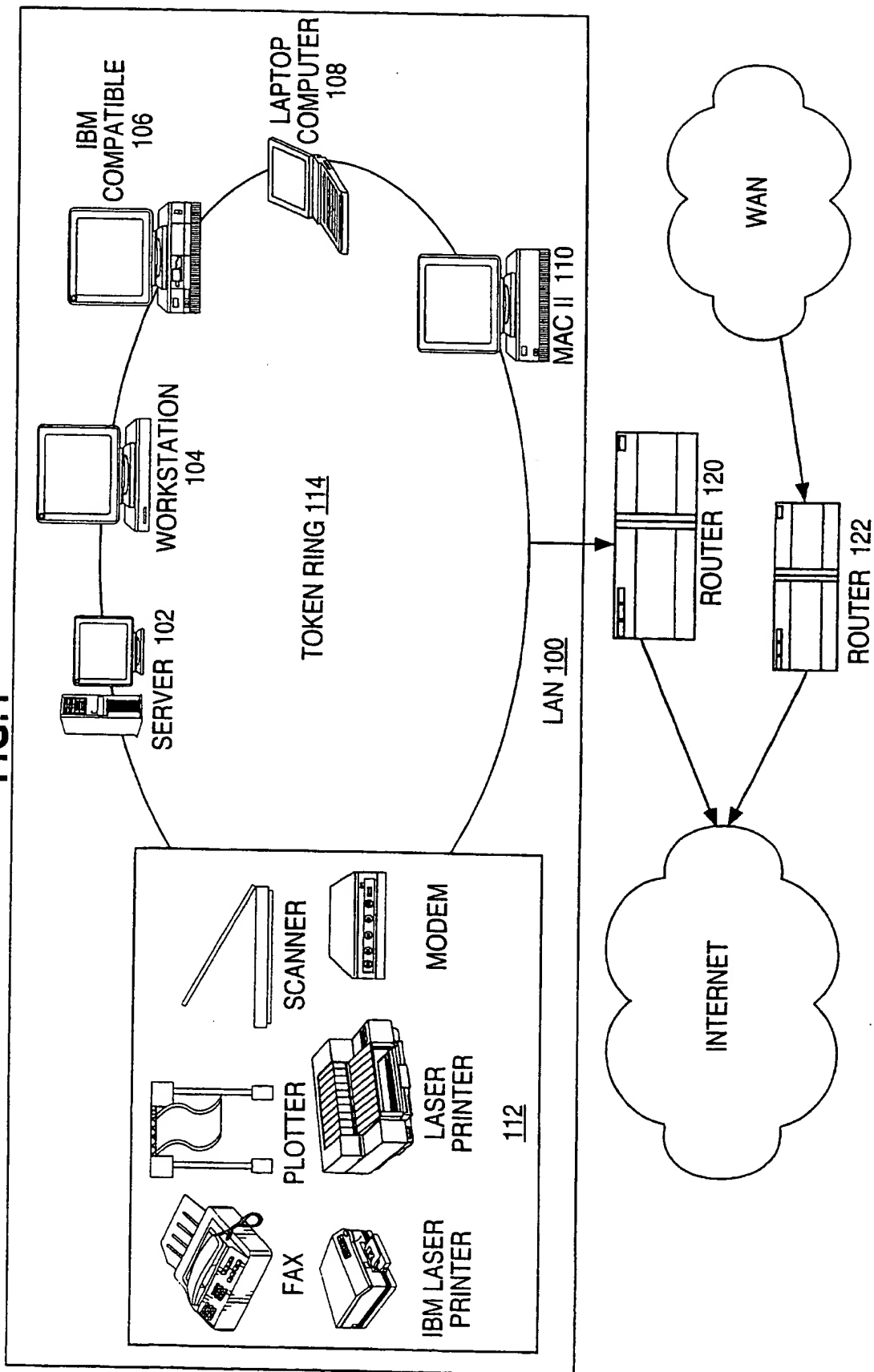
1 48. The system of claim 33, wherein the eighth processing means for  
2 processing further comprises means for initiating payment for the amount of the  
3 transaction to the merchant, less a predefined discount rate that is paid by the  
4 merchant.

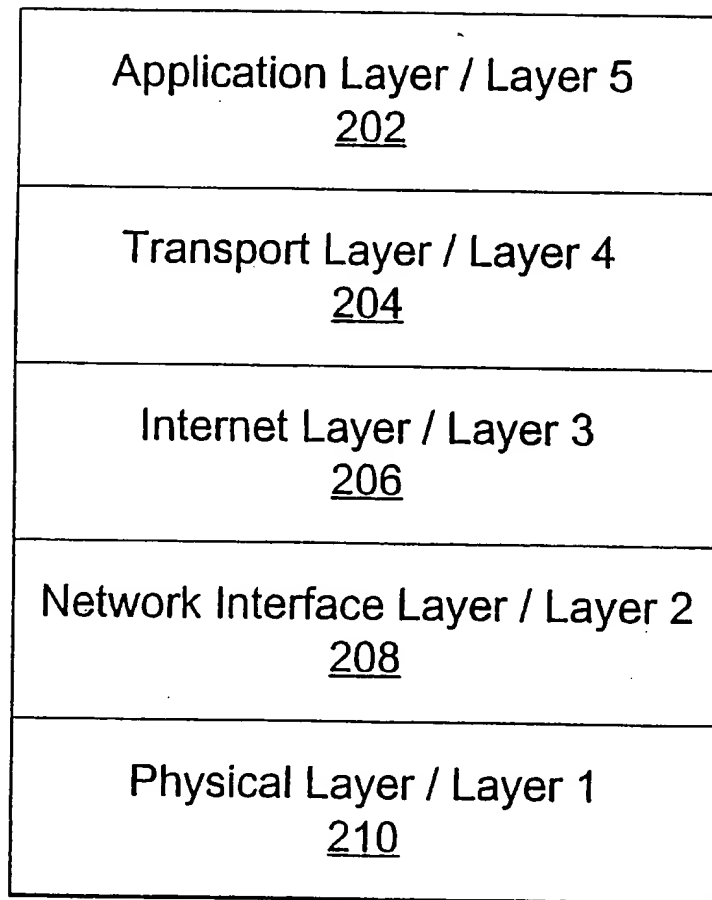
1 49. The system of claim 33, wherein the ninth processing means for  
2 calculating further comprises means for:  
3 checking a merchant identifier in each transaction to determine if the  
4 associated merchant is a preferred merchant;  
5 applying pre-established payment guidelines, if the merchant is a  
6 preferred merchant, with transactions associated with the merchant; and  
7 sending the merchant a bill.

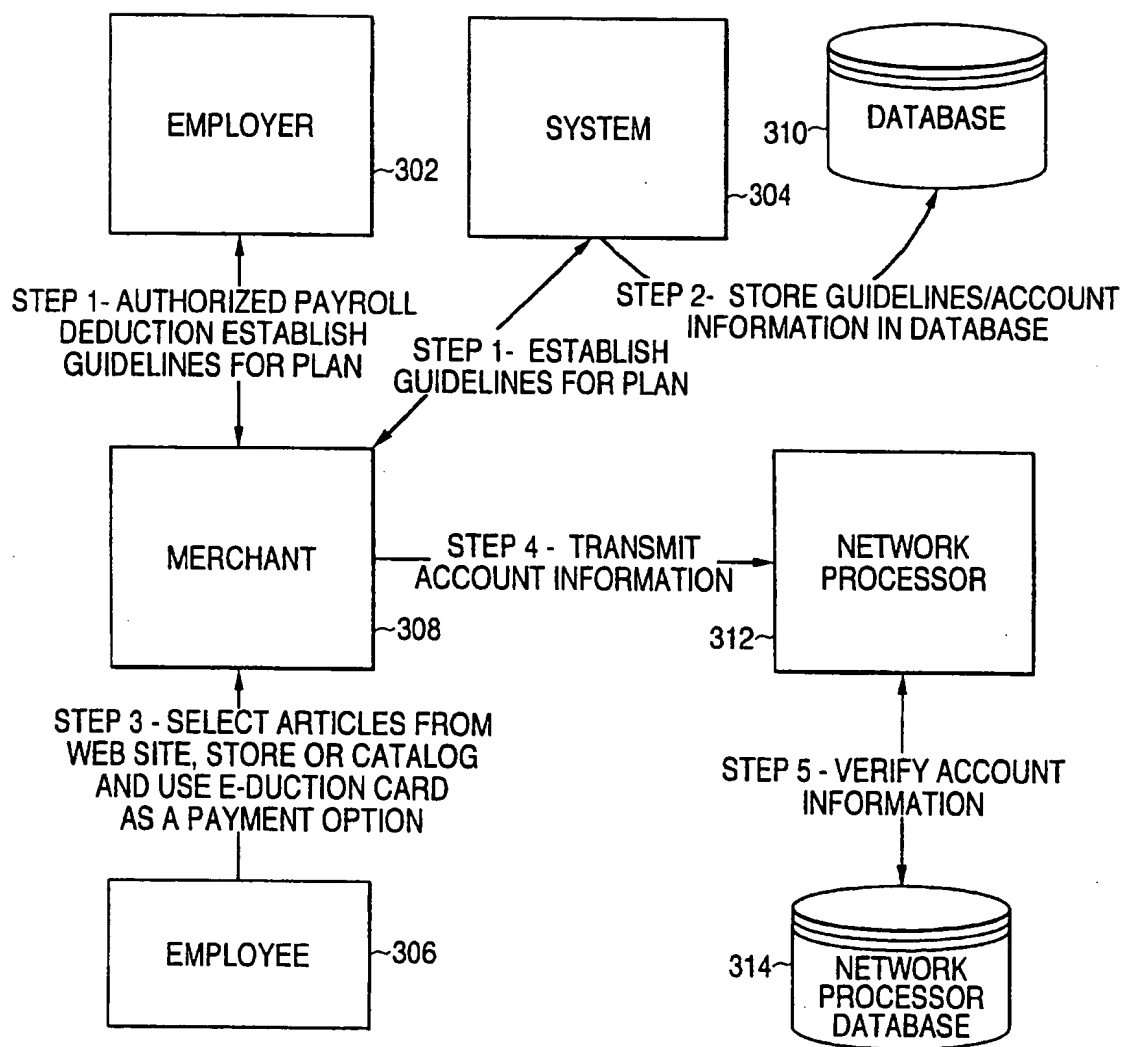
1 50. The system of claim 33, wherein the ninth processing means for  
2 calculating further comprises means for generating a deduction file with  
3 installment payments for the employee and transmitting the deduction file to a  
4 payroll processor for sorting and processing.

1 51. A method for using an e-duction card as a payment instrument during on-  
2 line and off-line purchases with a participating merchant, whereby a purchase  
3 amount paid with the e-duction card is deducted from an employee's future  
4 paycheck, the method comprising the steps of:  
5       authorizing, by an employer, a processing system to offer payroll  
6 deduction as a payment option during commerce transactions between the  
7 employee and the participating merchant;  
8       signing-up, by the processing system, preferred merchants who agree to  
9 accept the e-duction card;  
10       establishing, by the employer, the processing system, and the preferred  
11 merchant, guidelines for using the e-duction card;  
12       enrolling the employee to participate in a payroll deduction plan;  
13       creating, by the processing system, e-duction cards that are used as a  
14 payment option by authorized employees and accounts that correspond to the e-  
15 duction cards;  
16       selecting, by the employee, articles to be purchased from the preferred  
17 merchant and paying for the articles with the e-duction card;  
18       submitting, by the preferred merchant to a network processor, information  
19 stored on the e-duction card;  
20       verifying, by a network processor, the employee and merchant status;  
21 processing, by the network processor, a transaction reflecting the employee's  
22 purchase and transferring a transaction file with all transactions to the processing  
23 system in order for the appropriate amount to be deducted from the employee's  
24 future paycheck;  
25       calculating, by the processing system, installment payments for each  
26 transaction in the transaction file; and  
27       deducting calculated installment payments from the employee's future  
28 paycheck and updating the employee corresponding account and notifying the  
29 employee about the transaction.

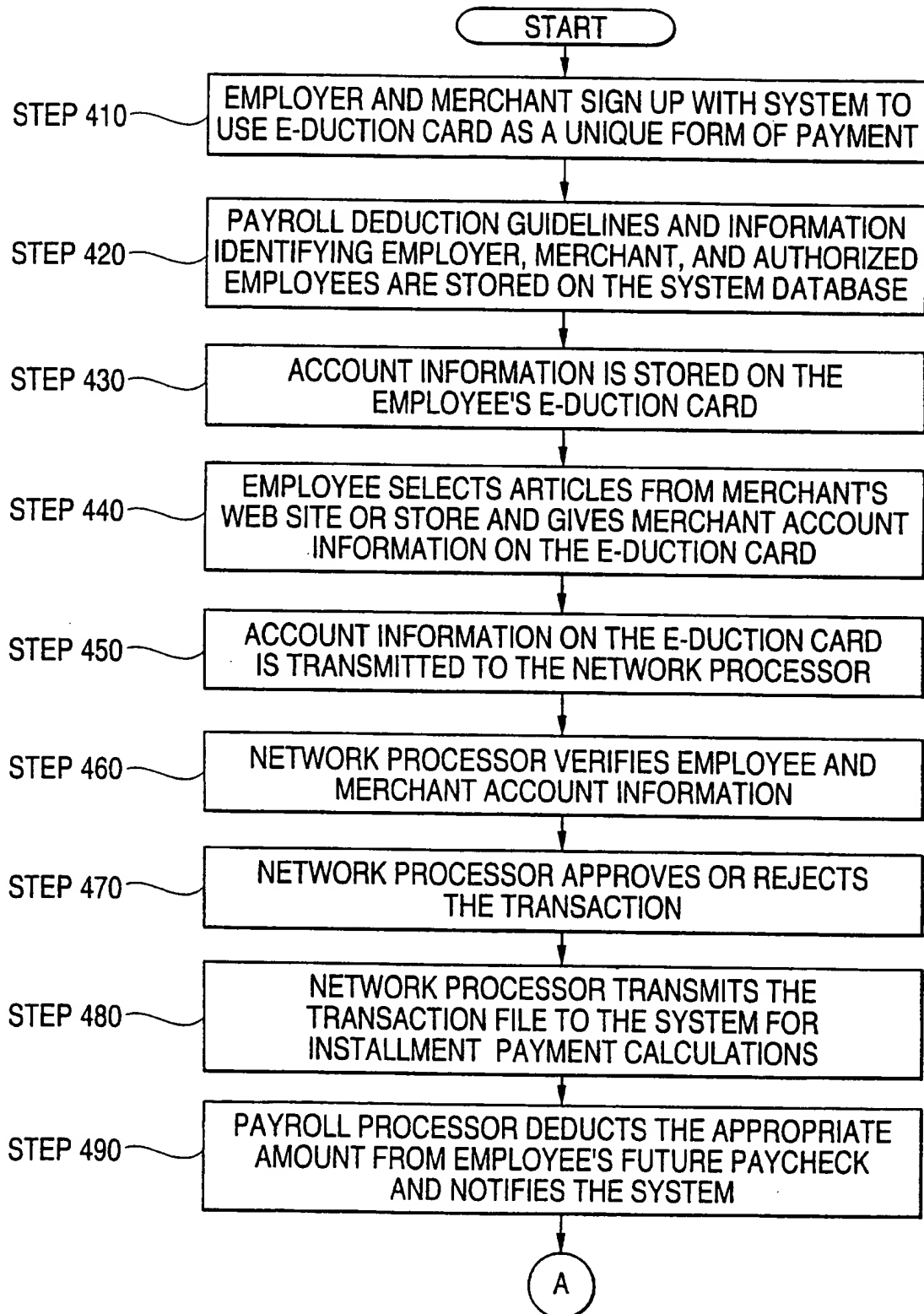
**FIG.1**



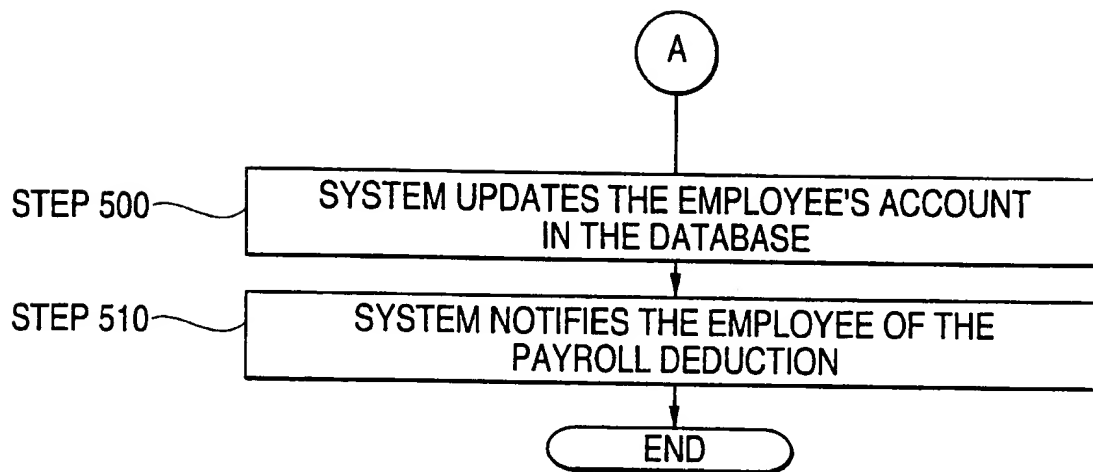
**FIG. 2****TCP/IP Layering Model**

**FIG. 3**

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**FIG. 4A**



**FIG. 4B**

# INTERNATIONAL SEARCH REPORT

In .ational Application No  
PCT/US 01/02238

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G07F7/10 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G07F G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	O'MAHONY, PEIRCE, TEWARI: "Electronic Payment Systems" 1997, ARTECH HOUSE, BOSTON * LONDON XP002153672 236620 page 61, line 16 -page 62, line 3 page 62, line 7 - line 10 page 62, line 15 -page 63, line 13; figure 4.1	33
Y		36, 37
A		34, 35, 38-50
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Date of the actual completion of the international search

18 May 2001

Date of mailing of the international search report

08 06 2001

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# INTERNATIONAL SEARCH REPORT

In ational Application No  
PCT/US 01/02238

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 878 141 A (DALY MICHAEL T ET AL) 2 March 1999 (1999-03-02) column 1, line 66 -column 2, line 2 column 3, line 60 - line 63 column 4, line 52 - line 57 column 5, line 13 - line 17 column 6, line 18 - line 24 column 6, line 29 - line 36 ----	36,37
X	EP 0 725 376 A (SONY CORP) 7 August 1996 (1996-08-07) column 3, line 39 - line 54 column 4, line 13 - line 17; figure 1 column 6, line 45 - line 57 ----	33,36,37
A	"MICROSOFT, VISA AND MASTERCARD'S PUSH FOR SECURE ON-LINE TRANSACTIONS" CHAIN STORE AGE EXECUTIVE WITH SHOPPING CENTER AGE,US,LEBHAR-FRIEDMAN, NEW YORK, NY, 1 September 1995 (1995-09-01), page 136 XP000579412 ISSN: 0193-1199 column 1, paragraph 3 -----	42-47

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 01/02238

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1.18-32.51  
because they relate to subject matter not required to be searched by this Authority, namely:  
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Claims Nos.: 1,18-32,51

Rule 39.1(iii) PCT - Scheme, rules and method for doing business  
Claims 1 and 51 relate to a method for using an e-duction card as a payment instrument whereby a purchase amount paid with the e-duction card is deducted, in installments, from an employee's future paycheck and where the employer authorizes a processing system to offer payroll deduction as a payment option during commerce transactions. The rôle of the employer is to guarantee purchases on the basis of a payment, for example, at the end of each month. This seems to be a business solution to a business problem and not to constitute a technical invention. Using technical means for a purely non-technical purpose does not necessarily confer technical character on the method in question. Indeed this seems to be the case in claims 1 and 51 of this application in which further steps of establishing guidelines for using the e-duction card and enrolling the employees etc. seem to be non-technical features, despite the fact that they are carried out by standard technical means. However, claims 33-50 do relate to a physical entity, a system, for supporting the economic activity. The search has therefore been directed towards these claims as they may constitute an invention in spite of Rule 39.1(iii).

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. Application No

PCT/US 01/02238

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5878141 A	02-03-1999	NONE	
EP 0725376 A	07-08-1996	JP 8214281 A	20-08-1996
		US 5845260 A	01-12-1998